

REMARKS/ARGUMENTS

This Amendment is submitted in response to the Final Office Action dated November 30, 2007. The deadline for responding is February 29, 2008.

I. Introduction

Claims 1, 2, 4, and 30 have been amended to clarify the claimed features. No new matter has been added.

Claims 1-5, 7-12, 14-18, 30, and 31 stand rejected under 35 U.S.C. 102(e) as being anticipated by U.S. Patent Publication No. 20040039938 to Katz et al. (hereinafter "the Katz et al. publication"). Claim 6 stands rejected under 35 U.S.C. 103(a) as being unpatentable over the Katz Publication in view of U.S. Patent Publication No. 20020112073 to Bearden et al. (hereinafter "the Bearden et al. publication"). Claims 13, 19, and 32 stand rejected under 35 U.S.C. 103(a) as being unpatentable over the Katz et al. publication in view of Patent Publication No. 20020112073 to MeLampy et al. (hereinafter "the MeLampy et al. publication"). Claims 20, 21, 25, 26, and 27 stand rejected under 35 U.S.C. 103(a) as being unpatentable over the Katz et al. publication in view of Patent Publication No. 20030195861 to McClure et al. (hereinafter "the McClure et al. publication"). Claims 22, 23, 28, and 29 stand rejected under 35 U.S.C. 103(a) as being unpatentable over the Katz et al. publication and the McClure et al. publication and further in view of the MeLampy et al. publication").

As will be discussed below, none of the pending claims, as amended, are anticipated or rendered obvious by the applied references.

II. Claims 1-6 are Patentable Under §102 and/or §103

Claim 1, as amended, contains the feature [emphasis added]:

A method of testing a firewall comprising:
transmitting at least one of a session initiation signal to initiate a communications session through said firewall and a session termination signal used to terminate an established communications session; and
monitoring to determine from the time of at least one said transmitted signal at least one of a port opening delay which occurs in regard to a session initiation signal and opening a port in said firewall for a communications session that is being initiated, and a port closing delay which occurs in regard to a session termination signal and closing a port in said firewall when terminating an established communications session.

The Katz et al. publication discloses, at paragraph [0024] lines 1-5 (emphasis added):

"Referring to step 115, the **client can measure** the network latency between the client and the server. As defined herein, **network latency is an expression of how much time it takes a packet of data to get from one designated point to another.**"

Further in the paragraph, at lines 13-15:

"The round-trip network latency can be computed as the difference between the send time and the receive time."

Then , at paragraph [0028], at lines 8-11 (emphasis added):

"The **open port duration can be re-calculated** with each new network latency measurement or when the

network latency varies more than a predetermined percentage or amount."

The Katz et al. publication does not teach or suggest **monitoring to determine from the time of a session initiation signal a port opening delay (which occurs in regard to a session initiation signal and opening a port in said firewall for a communications session that is being initiated).**

Katz measures network latency, and controls the "open port duration" (the time between a port opening and closing", not the time between "a session initiation signal and opening a port".

The Examiner states at 3.1 of the Office Action that: "A delay is defined as the time period between two events." While that may be true, the two events in claim 1 are "a session initiation signal and opening a port". "Monitoring" or "determining" the time between these events is not taught, suggested, or mentioned in the Katz et al. publication. Similarly, the Katz et al. publication does not teach "monitoring to determine from the time of a session termination signal" to "closing a port in said firewall".

The Examiner states at the end of 3.1: "The delay value is the time period for a transition from one state to the next state." First, this definition does not apply to the features of claim 1, as described above. Second, even if it did, as shown above, these features are not taught or suggested in the Katz et al. publication.

For at least these reasons, **claim 1, as amended, is patentable over the Katz et al. publication.**

Claims 2-6, for at least the reason of being dependent on allowable claim 1, are therefore also patentable over the Katz et al. publication.

Claim 2, as amended, is additionally patentable over the Katz et al. publication because it contains the features [emphasis added]:

transmitting session initiation signals at an increasing rate through said firewall to cause the opening of ports in said firewall,

measuring the effect of said increasing rate of session initiation signals on opening delay time associated with opening a port in response to transmitted session initiation signals; and

transmitting session termination signals at an increasing rate through said firewall to cause the closing of ports in said firewall,

measuring the effect of said increasing rate of session termination signals on closing delay time associated with closing a port in response to transmitted session termination signals.

The Examiner states in 3.2: "The Katz prior art discloses the dynamic adjustment (increasing) of session signaling information (session opening and session closing). (see Katz paragraph [0013], lines 5-9; paragraph [0030], lines 1-4; dynamically adjust port opening, port closing).

It can readily be seen that the Katz et al. publication teaches changing the "opening port duration" (see above); not, as the amended claim 2 discloses, the transmission of "session origination signals" to "measure the effect of said increasing rate of session origination signals on opening time delay". Nor does it teach or suggest the transmission of "session termination signals" to "measure the effect of said increasing rate of session termination signals on closing time delay".

For at least these additional reasons, claim 2 is patentable over the cited reference.

Claim 4, as amended, is additionally patentable for the following features:

transmitting session initiation signals at an increasing rate through said firewall to cause the opening of ports in said firewall,

measuring the effect of said increasing rate of session initiation signals on opening delay time associated with opening a port in response to said session initiation signals; and

transmitting session termination signals at an increasing rate through said firewall to cause the closing of ports in said firewall,

measuring the effect of said increasing rate of session termination signals on closing delay time associated with closing a port in response to said session termination signals

The Examiner cites paragraph 0013, lines 5-9 to support "transmitting session signals at an increasing rate". First, amended claim 4 now contains the feature: "transmitting session initiation signals at an increasing rate". However, the citation to the Katz et al. publication reads: "In particular, the present invention provides a solution for dynamically varying the timing of port openings and closings according to a latency value to optimize the time duration that ports are open". There is no mention or suggestion of "transmitting session initiation signals at an increasing rate" or of "measuring the effect of said increasing rate" on "opening delay time". The Katz et al. publication reference is to changing the **duration** of port openings.

The Examiner goes on to cite paragraph 0030, lines 1-4 [emphasis added]: "In consequence, the port openings and closings can be timed using a dynamically changing open port **duration** to keep the port openings and closings optimized for

the network environment". Again, there is no mention of "transmitting session initiation signals at an increasing rate" or of "measuring the effect of said increasing rate" on "opening delay time". The reference is to change the **duration** of port openings.

The Examiner goes on to cite paragraph 0034, lines 1-5 (see citation above), which refers to "monitoring network latency" to "dynamically adjust the open port duration". There is no mention of "transmitting session initiation signals at an increasing rate" or of "measuring the effect of said increasing rate" on "opening delay time".

Finally, the Examiner cites paragraph 0024, lines 5-9, which disclose timing the sending of a packet and the receipt of the packet to determine "network latency", not "transmitting session initiation signals at an increasing rate" or of "measuring the effect of said increasing rate" on "opening delay time".

The above arguments are just as applicable to amended claim 4's features of "transmitting session termination signals at an increasing rate", and "measuring the effect of said increasing rate" on "closing delay time".

Claim 5 is additionally patentable over the cited reference as it contains the further feature:

determining an average closing delay for each of a plurality of different session signaling rates.

The Examiner cites paragraph 0030, lines 1-4: "In consequence, the port openings and closings can be timed using a dynamically changing open port duration to keep the

port openings and closings optimized for the network environment". There is no mention or suggestion of "closing delays", to say nothing of "average closing delays", or of different "session signaling rates". The **duration** of the port openings are changed, not the "signaling rates" transmitted toward the port.

For at least these additional reasons, claim 5 is patentable over the cited reference.

Regarding claim 6, it should be noted that the Bearden et al. publication does not supply any of the above noted deficiencies in the Katz et al. publication reference.

III. Claims 7-13 are Patentable Under §102 and/or §103

Claim 7 contains the feature [emphasis added]:

*measuring a **port closing delay time** associated with the closing of said at least one port following the transmission of said signal to terminate said communications session*

The Katz et al. publication does not teach or suggest a **port closing delay time**. As discussed above in relation to claim 1, the Katz et al. publication **controls** or **adjusts** the opening and closing of ports, but does not teach, suggest, or reference "port closing delay times".

For at least these reasons, **claim 7 is patentable over the Katz et al. publication.**

Claims 8-13, for at least the reason of being dependent on allowable claim 7, are therefore also patentable over the Katz et al. publication.

It should be noted that the MeLampy et al. publication does not supply any of the above noted deficiencies in the Katz et al. publication reference.

Claim 8 is additionally patentable over the cited reference as it contains the further feature:

wherein said port closing delay is a time period which occurs between the time a signal used to cause the closing of the port is detected and said port ceases to allow communications signals to pass through from the first side of said firewall to the second side of said firewall

The Examiner cites paragraph 0027, lines 6-9 [emphasis added]: "Importantly, referring to decision block 130 and step 135, the network open port **duration** can be used to **time port openings and closings** so that the **client and server remain synchronized** until a communication session is complete."

Again, the Katz et al. publication discloses timing port openings and closings, whereas claim 8 discloses: a "port closing delay", which is further defined as: "a time period which occurs between the time a signal used to cause the closing of the port is detected and said port ceases to allow communications signals to pass through from the first side of said firewall to the second side of said firewall".

There is no mention or suggestion in the Katz et al. publication of determining when a signal to cause the closing of the port is detected", nor of the time that "said port ceases to allow communications signals to pass through", or to measure the time period between those two events.

The Examiner further cites paragraph 0024, lines 5-9 [emphasis added]: "to determine the **network latency**, a client can note the time when a packet, such as a client request, is

sent to a server. The client then can note the time a **server acknowledgement is received** in response to the packet".

Again, there is no teaching or suggestion of determining when a signal to cause the closing of the port is detected", nor of the time that "said port ceases to allow communications signals to pass through", or to measure the time period between those two events.

For at least these additional reasons, claim 8 is patentable over the cited reference.

Claim 11 is additionally patentable over the cited reference as it contains the further feature:

determining the level of session signaling that causes a closing delay time which exceeds a preselected maximum closing delay time.

The Examiner cites paragraph 0024, lines 5-9 [emphasis added]: "to determine the **network latency**, a client can note the time when a packet, such as a client request, is **sent** to a server. The client then can note the time a **server acknowledgement is received** in response to the packet". This reference does not teach or suggest "closing delay time", to say nothing of "determining the level of session signaling that causes" such a delay. There is also no suggestion of a "preselected maximum closing delay time".

The Examiner also cites paragraph 0025, lines 7-9: "Alternatively, the measured round-trip latency can be scaled by adding a predetermined time value."

Again, the Katz et al. publication discloses determining a **duration** of keeping a port open, based upon a factor times the network latency. This is not related to a "closing delay", or how such a closing delay is affected by varying levels of "session signaling".

For at least these additional reasons, claim 11 is patentable over the cited reference.

Claim 12 is additionally patentable over the cited reference as it contains the further feature:

determining the amount of firewall processing power required for a particular application based on an expected traffic load and said monitored information indicating the effect of session signaling of different loads on said closing delay.

The Examiner cites paragraph 0034, lines 5-8 [emphasis added]: "For example, the **open port duration** can be **adjusted** to account for network congestion, server load, and other circumstances that affect network latency".

There is nothing in this reference related to "closing delay", "expected traffic load", or "determining the amount of firewall processing power required".

For at least these additional reasons, claim 12 is patentable over the cited reference.

IV. Claims 14-19 are Patentable Under §102 and/or §103

Claim 14 contains the feature [emphasis added]:

*determining a time when said test signals first pass through said at least one port, said at least one port being opened in response to said signal to initiate a communications session; and
determining a port opening delay which occurs in regard to opening a port in said firewall for said communications session from said determined time*

The Examiner cites paragraph 0030, lines 1-4: "In consequence, the port openings and closings can be timed using a dynamically changing open port duration to keep the port openings and closings optimized for the network environment". Again, the Katz et al. publication times port opening **duration** (time between opening a port and closing a port). There is no measurement of **"a time when said test signals first pass through said at least one port"**, nor can there be a measurement of the "port opening delay", by comparing the determined time to the "signal to initiate a communications session". As described above, there is no teaching or suggestion of measuring a "port opening delay" for any purpose.

The Examiner states at 3.5 of the Office Action that the Katz et al. publication time discloses: "a time stamp for communications that pass through a communications session (session signaling) interface. The opening of a port is a communications initiation function and is the first signal to pass through a communications session interface." Applicant is unsure of what it means to "pass through a communications session interface". However, Applicant is sure that the Katz et al. publication does not teach or suggest **"determining a time when said test signals first pass through said at least one port"**. The cited references in the Katz et al. publication disclose "a time the client sends a request", "a time the client receives a response", and the "open port duration" (paragraph [0014]). None of these teach or suggest "test signals", or when such signals "first pass through said at least one port".

The Examiner next cites paragraph 0024, lines 5-9 [emphasis added]: "to determine the **network latency**, a client can note the time when a packet, such as a client request, is

sent to a server. The client then can note the time a server acknowledgement is received in response to the packet".

Again, as explained above, the Katz et al. publication is measuring the "network latency", not "port opening delay".

For at least these reasons, **claim 14 is patentable over the Katz et al. publication.**

Claims 15-19, for at least the reason of being dependent on allowable claim 14, are therefore also patentable over the Katz et al. publication.

It should be noted that the McLampy et al. publication does not supply any of the above noted deficiencies in the Katz et al. publication reference.

V. Claims 30-32 are Patentable Under §102 and/or §103

Claim 30, as amended, contains the feature [emphasis added]:

transmitting session termination signals used to control the termination of communications sessions through said firewall at an increasing rate; and measuring the effect of the increasing rate of session termination signals on port closing delays associated with the termination of communications sessions through said firewall.

The Examiner cites paragraph 0013, lines 5-9 to support "transmitting session signals at an increasing rate". However, the citation reads: "In particular, the present invention provides a solution for dynamically varying the timing of port openings and closings according to a latency value to optimize the time duration that ports are open".

There is no mention of "transmitting session termination signals ...at an increasing rate" or of "measuring the effect of the increasing rate" on "port closing delays". The reference is to change the **duration** of port openings.

The Examiner goes on to cite paragraph 0030, lines 1-4 [emphasis added]: "In consequence, the port openings and closings can be timed using a dynamically changing open port **duration** to keep the port openings and closings optimized for the network environment". Again, there is no mention of "transmitting session termination signals ...at an increasing rate" or of "measuring the effect of the increasing rate" on "port closing delays". The reference is to change the **duration** of port openings.

The Examiner goes on to cite paragraph 0034, lines 1-5 (see citation above), which refers to "monitoring network latency" to "dynamically adjust the open port duration". There is no mention of "transmitting session termination signals ...at an increasing rate" or of "measuring the effect of the increasing rate" on "port closing delays".

For at least these reasons, **claim 30 is patentable over the Katz et al. publication.**

Claims 31-32, for at least the reason of being dependent on allowable claim 30, are therefore also patentable over the Katz et al. publication.

It should be noted that the McLampy et al. publication does not supply any of the above noted deficiencies in the Katz et al. publication reference.

VI. Claims 20-24 are Patentable Under §102 and/or §103

Claim 20 contains the feature [emphasis added]:

an analysis module for determining at least a port closing delay from a session signal time and a time probe signals are detected to stop passing through a port in said firewall corresponding to an initiated communications session.

As discussed above, the Katz et al. publication does not teach or suggest "port closing delay", for any purpose, but certainly not by determining the time from "a session signal time" and a "time probe signals are detected to stop passing through a port".

The Examiner goes on to cite the McClure et al. publication. However, the McClure et al. publication does not monitor "port closing delay". For example, at paragraph 0162, lines 3-5: "the ICMP scanning process sends 100 ICMP echo requests and monitors responses and time-outs." There is no determination of the time from "a session signal time" and a "time probe signals are detected to stop passing through a port".

The Examiner goes on to cite paragraph 0171, lines 1-4: "For each open TCP port located during the service discovery phase, a TCP data probe is sent to that port if the port is known to be typically associated with a particular service." Again, there is no timing of port delays.

The Examiner next cites paragraph 0172, lines 1-4, which also doesn't teach or suggest determination of the time from "a session signal time" and a "time probe signals are detected to stop passing through a port". The cited portion states: "For each UDP port discovered during the service discovery phase, a similar UDP data probe is sent to each UDP

port on the target computer known to be typically associated with a service." Sending a probe out will not result in a determination of "port opening delays" or "port closing delays", but will simply identify which ports are open or closed at any given time.

Therefore, since neither the Katz et al. publication nor the McClure et al. publication teach or suggest the features of claim 20, no combination of the references could do so.

For at least these reasons, **claim 20 is patentable over the Katz et al. publication in conjunction with the McClure et al. publication.**

Claims 20-24, for at least the reason of being dependent on allowable claim 20, are therefore also patentable over any combination of the cited references.

VII. Claims 25-29 are Patentable Under §102 and/or §103

Claim 25 contains the feature [emphasis added]:

*a test signal analyzer for detecting probe signals passing through said first side of said firewall to said second side of said firewall and for **determining port closing delays** as measured from the **time the test signal analyzer detects a signal used to close a port in said firewall and said analyzer ceases to detect test signals passing through said firewall.***

As discussed above, the Katz et al. publication does not teach or suggest "**determining port closing delays**" or measuring the "**time the test signal analyzer detects a signal**

used to close a port in said firewall and said analyzer ceases to detect test signals passing through said firewall".

The Examiner cites the McClure et al. publication in conjunction with the Katz et al. publication. As discussed above, the McClure et al. publication does not monitor "port closing delays". For example, at paragraph 0162, lines 3-5: "the ICMP scanning process sends 100 ICMP echo requests and monitors responses and time-outs." There is no determination of the time from "a session signal time" and a "time the test signal analyzer detects a signal used to close a port in said firewall and said analyzer ceases to detect test signals passing through said firewall".

The Examiner goes on to cite paragraph 0171, lines 1-4: "For each open TCP port located during the service discovery phase, a TCP data probe is sent to that port if the port is known to be typically associated with a particular service." Again, there is no timing of port delays.

The Examiner next cites paragraph 0172, lines 1-4: "For each UDP port discovered during the service discovery phase, a similar UDP data probe is sent to each UDP port on the target computer known to be typically associated with a service." Sending a probe out will not result in a determination of "port opening delays" or "port closing delays", but will simply identify which ports are open or closed at any given time.

For at least these reasons, claim 25 is patentable over the Katz et al. publication in conjunction with the McClure et al. publication.

Claims 26-29, for at least the reason of being dependent on allowable claim 25, are therefore also patentable over any combination of the cited references.

VIII. Conclusion


In view of the foregoing amendment and remarks, it is respectfully submitted that the pending claims are in condition for allowance. Accordingly, it is requested that the Examiner pass this application to issue.

If there are any outstanding issues which need to be resolved to place the application in condition for allowance the Examiner is requested to call (732-542-9070) and schedule an interview with Applicant's undersigned representative. To the extent necessary, a petition for extension of time under 37 C.F.R. 1.136 is hereby made and any required fee in regard to the extension or this amendment is authorized to be charged to the deposit account of Straub & Pokotylo, deposit account number 50-1049.

None of the statements or discussion made herein are intended to be an admission that any of the applied references are prior art to the present application and Applicants preserve the right to establish that one or more of the applied references are not prior art.

Respectfully submitted,

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